

pressure should not be allowed to fall below that necessary to perfuse those same arteries.

But in patients with severe cardiac failure, in whom impedance (afterload) is a major factor in the failure, orally given hydralazine tends to decrease systemic vascular resistance. Afterload reduction should not be attempted, however, without determining the degree of pulmonary congestion and of peripheral hypoperfusion, while the patient is in the coronary unit.

It is remarkable how quickly systemic vasodilators have become an important new medical advance in the treatment of acute and chronic congestive heart failure. In the future, as more experience is gained with the use of nitrates and as newer vasodilators become available, these medications will likely be used as often as digitalis in the standard treatment of congestive heart failure. For the present, family physicians should use the nitrates only as a supplement to the standard regimen of digitalis, diuretics and decreased use of dietary salt.

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Fetal Monitoring

THE USE OF the nonstress test is a reliable indication of fetal well-being in cases of suspected uteroplacental insufficiency. The test is rapid and inexpensive, requires little physician time and is easy to carry out. It can be used in broader circumstances than the contraction stress test. The technique involves monitoring fetal heart rate and fetal activity. A reactive pattern consists of four episodes of an increase of fetal heart rate of at least 15 beats per minute, lasting 15 to 20 seconds after fetal movement. Twenty minutes are allowed for activity. If the activity does not occur, an additional 20-minute period is allowed.

A response other than full reactive, including (1) no fetal activity of fewer than four accelerations or (2) less than 15 beats per minute increase, demands further evaluation. A reactive pattern correlates well with fetal well-being and is equivalent to a negative contraction stress test. In situations requiring prolonged evaluation the test should be repeated weekly.

In a large study 75.5 percent of fetuses con-

sidered at high risk had reactive nonstress tests and went to term with no perinatal mortality. In conjunction with the contraction stress test, the nonstress test offers broader application, less expense and an accurate and sensitive screening program.

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Adjunctive Laboratory Tests for the Early Diagnosis of Pregnancy

CURRENTLY AVAILABLE IMMUNOLOGIC TESTS for pregnancy are based on detecting human chorionic gonadotropin (HCG) in the urine or blood. HCG is essential for the maintenance of the corpus luteum and the viability of early pregnancy.

HCG can reliably be detected in the urine by the antigen antibody reaction two weeks following a missed menstrual period, using the office slide test or the more sensitive two-hour laboratory tube test.

With radioimmunoassay (RIA), the β subunit of the HCG molecule can be detected shortly after implantation, several days before the missed period. This test is carried out using blood rather than urine and is extremely sensitive. Considerations limiting its use include, expense (\$20 to \$25) and the 36 to 48 hours required to obtain a result.

More recently available is the radioreceptor assay (RAA) test for HCG. This method detects the HCG molecule by measuring its competition for specific receptor sites on cell membranes prepared from bovine corpora lutea. Except for the potentially false-positive result due to the mid-cycle surge of luteotropin, also called luteotropic hormone (LH), at ovulation, this is the most sensitive test for pregnancy available. A test result can be provided in one to two hours, and the cost is \$15 to \$18.

HCG is essential for the maintenance of pregnancy and the amount present is generally proportional to the amount of trophoblastic tissue present. Significantly elevated levels may suggest multiple gestation, while very low levels may suggest impending abortion or a nonviable pregnancy. Absolute levels of HCG are useful in the diagnosis and monitoring of a hydatidiform mole and choriocarcinoma. These values are obtained